Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
The 4.9 GHz Band Transferred from Federal Government Use	)	WT Docket No. 00-32

CONSOLIDATED REPLY TO OPPOSITIONS

The Los Angeles County Sheriff's Department ("LASD"), by its undersigned counsel, hereby files this Consolidated Reply to the Consolidated Opposition of Cornell University ("Cornell") to Petitions for Reconsideration and the Consolidated Opposition to Petitions for Reconsideration filed by National Academy of Sciences' Committee on Radio Frequencies ("CORF") (collectively the "Oppositions") to the Petition for Reconsideration filed by LASD on May 8, 2002, in the above captioned proceeding (the "Petition").

I. Summary

In the Petition, LASD argued that the Federal Communications Commission (the "Commission") erred – both in law and in policy – by instituting a complete ban on the use of aeronautical mobile services in the 4940-4990 MHz band (4.9 GHz band). As the Petition clearly demonstrated, public safety organizations, such as LASD, desperately need to be able to use this spectrum for aeronautical mobile purposes in order to effectively engage in life-saving services.

In the Oppositions, Cornell and CORF flatly reject the idea that anything but a complete nationwide ban on the use of aeronautical mobile services in the 4.9 GHz band can protect sixteen radio astronomy observatories scattered in isolated areas throughout the country, including observatories located in territories outside of the continental U.S. As the Petition demonstrated – and common sense clearly dictates – this approach is so ill-conceived and vastly overbroad that it constitutes an arbitrary and capricious decision.

II. Argument

A. The Table of Frequency Allocations Does Not Mandate a Complete Ban

Contrary to what the Oppositions (Cornell at pp. 3-4; CORF at pp. 2-3) would have the Commission believe, footnotes US257 and US311 to the Table of Frequency Allocations in no way compel the Commission to institute a complete ban on aeronautical use of the 4.9 GHz

band.[1] Footnote US257 states that, "every practicable effort will be made to avoid the assignment of frequencies in this band to stations in the aeronautical mobile service which operate outside of [the geographical areas surrounding the observatories], but which may cause harmful interference to the listed observatories. Should such assignments result in harmful interference to these observatories, the situation will be remedied to the extent practicable."[2]

This footnote in no way indicates that a complete ban on aeronautical use outside the geographic area of these observatories (including Los Angeles County) is necessary. Rather, it states that efforts should be made to restrict assignments that *actually* cause interference. As stated in the Petition, there is absolutely no evidence on the record to prove *actual* interference with radio astronomy observations. Even if such use did cause interference, the footnote merely states that efforts should be taken to remedy the situation to the extent practicable. This instruction seems to indicate that the Commission should look for practicable, least restrictive alternatives to ensure non-interference in the band, rather than draconian methods that exclude one use of the band in favor of another.

B. The Reallocation Letter Did Not Mandate a Complete Ban

Similarly, the Department of Commerce through the National Telecommunications and Information Administration ("NTIA") did not compel the Commission to institute a complete ban on aeronautical use of the 4.9 GHz band. In its March 30, 1999 letter to the Commission, NTIA states expresses its desire to protect radio astronomy observatories, and asks the Commission to promulgate rules to meet this objective.[3] LASD strongly believes that this goal is easily attainable through the implementation of something less than a complete nationwide ban on aeronautical services in the 4.9 GHz ban nationwide. As stated above (and in the Petition), there is no compelling evidence on the record to demonstrate that any harm to radio astronomy occurs as a result of aeronautical use of the band. Consequently, there is no need to institute a complete ban.

C. The Proposed Use of the Band Will Cause Less Interference Than Prior Use

Prior to the reallocation of the 4.9 GHz band, this spectrum was used for a variety of purposes by the armed services and other federal agencies, including the National Oceanic and Atmospheric Administration (NOAA). These services included tactical training electronic warfare support, use of the Light Airborne Multipurpose System, unmanned aerial vehicles, such as the Predator, and troposcatter communications. Use of this spectrum often involved high-powered radio sources and high altitude aircraft. Helicopter downlink services, on the other hand, involve low power radio sources and low altitude aircraft. It is therefore highly likely that

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1 See 47 C.F.R. §2.106.

2 *Id.* at note US257. Footnote US311 uses the same language when it states, "[i]n addition, every practicable effort will be made to avoid assignment of frequencies in the band to stations in the aeronautical mobile service which operate outside of those geographic areas, but which may cause harmful interference to the listed observatories."

3 *See* Letter to the Honorable William E. Kennard, Chairman, Federal Communications Commission, from Larry Irving, the Assistant Secretary for Communications, United States Department of Commerce (rel. Mar. 30, 1999) (*Reallocation Letter*).

public safety organizations using the spectrum for aeronautical mobile services would present less interference risk to radio astronomy observatories than interference risk that incurred prior to reallocation.

It is also interesting to note that radio astronomy observatories – as they did prior to reallocation – will exist on the 4.9 GHz band on a secondary basis to public safety organizations' primary use.[4] However, the Oppositions seem to evidence a desire to diminish the primary purpose of the spectrum (*i.e.* protecting the public safety) by advocating a complete ban of perhaps one of the public safety organizations' most important use of the spectrum.

Moreover, the Commission should note that rather than traditional aeronautical services – as set forth in Part 87 of the Commission's rules – the proposed helicopter downlink service is more akin to a land mobile service that is temporarily airborne.

D. The Oppositions' Dismissal of LASD's Alternatives are Unfounded

In the Petition, LASD set forth several proposals which, if implemented, could further reduce the yet unproven risk of interferences that could occur due to the use of helicopter downlink services by public safety organizations. Rather than give careful consideration to these proposals, the Oppositions dismiss them out of hand.

1. Altitude and Power Outputs

The fact of the matter is that LASD's (or other public safety organizations') use of helicopter downlink services is unlikely to cause harmful interference to radio astronomy observatories. As discussed above, the power output and altitude of the helicopters will be considerably less than previous government users of the band. However, there are other reasons why interference is unlikely. For example, radio observatories generally receive their radio signals using very narrow beam widths from outer space. Their focal points originate at high altitudes, and are directed upwards towards outer space. Helicopters, on the other hand, will fly on a horizontal plane, below 1,000 feet, and direct their radio signals downward towards the earth using 15 dBi gain antennas with 10E azimuth beam widths. Therefore, the risk that helicopter downlink radio signals will interfere with radio astronomy observations is low.

2. Use of Directional Antennae

Cornell's Opposition to the use of directional antennae is similarly unfounded. Cornell states that a directional antenna on a helicopter is unlikely to limit its transmissions to a narrow direction considering the circuitous flight pattern and the aircraft's changes in direction, pitch and roll.[5] However, what Cornell completely fails to realize is that this is exactly how a directional antennae on aircraft of this type operates.

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[4] See *In the Matter of the 4.9 GHz Band Transferred from Federal Government Use*, WT Docket No. 00-32, Second Report and Order and Further Notice of Proposed Rulemaking (*Second R&O*) (rel. Feb. 27, 2002) 17 FCC Rcd 3955 at para. 3.

[5] See Consolidated Opposition of Cornell University To Petitions For Reconsideration (July 1, 2002) ("Cornell Opposition") at p. 9.

3. Geographical Limitations

Cornell's Opposition also discounts the ability for geographical limitations to adequately protect radio astronomy observatories.[6] It may be true that no single rule could account for the differing altitudes and topography of the observatories, however, considering the small number of observatories, their remote locations and the importance of that spectrum for life saving services to public safety organizations, it seems entirely appropriate for the Commission to engage in individual analysis to determine whether geographical limitations would prevent interference. As discussed above, the Table of Frequency Allocations identifies only sixteen radio astronomy observatories that are located in extremely remote areas of the country. It is therefore unlikely that any of the observatories would experience any interference from helicopter downlink services in the absence of a complete ban. However, to the extent that the potential for interference may occur, the Commission should undertake an analysis to determine what can be done to mitigate any such interference. While LASD disputes whether any real interference may occur to radio astronomy observatories in California, it notes that the topography of the Los Angeles basin provides a natural buffer to radio signals that may interfere with nearby radio observatories. Because these factors may differ, it is incumbent upon the Commission to consider these issues on a case-by-case basis. The use of this spectrum by public safety organizations is too important to create a blanket rule that will over regulate and provide an easy answer for spectrum management.

4. Providing Waivers of the Rules

In its opposition, CORF states that "generally a waiver is sought in advance of violation of a rule, but such action in advance cannot address unplanned emergencies."[7] This statement is apparently made to argue that the Commission should not grant, nor should it contemplate, waivers of any rules concerning aeronautical use of the 4.9 GHz band. Again, the rigidity of this argument against the use of the spectrum for some aeronautical services defies common sense. Strictly speaking, a public safety organization's use of the 4.9 GHz band for aeronautical purposes in extreme emergencies may not qualify for a waiver pursuant to the Commission's general waiver rules because the waiver request comes "after-the-fact." However, even if it decides to maintain the ban on aeronautical mobile use in the 4.9 GHz band, the Commission has the option to create standards and provide guidance concerning situations under which waivers of such a ban may be granted. Considering that life threatening emergencies may require public safety organizations to use the spectrum, it is entirely appropriate for the Commission to build into its rules waiver provisions for circumstances where otherwise prohibited use of the spectrum is allowable based upon a stated criteria.

As this proceeding progresses, LASD hopes to present more empirical data demonstrating to the Commission the ways in which the video downlink operate, and the reasons why it is unlikely to harm radio astronomy observatories.

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[6] See Cornell Opposition at p. 8.

[7] See Consolidated Opposition To Petitions For Reconsideration of National Academy of Sciences (July 1, 2002) at p. 6.

E. The Public Interest is Clearly Advanced by Assisting Public Safety Organizations

By allocating 50 MHz of spectrum in the 4940-4990 MHz band for public safety use, the Commission realized its ability to assist emergency service organizations and domestic first responders in their life saving duties. The Commission should not now backtrack, take half steps or handicap these very organizations by preventing them from fully utilizing the spectrum. As described above, there are no legal prohibitions from allowing aeronautical use of this spectrum. The Commission must take every effort to protect the lives of American citizens – there could not be a higher purpose for a governmental agency. Why then, would the Commission restrict vital helicopter downlink services in Los Angeles, New York City or Chicago for the sake of protecting radio observatories in Pie Town, New Mexico, Kitt Peak Arizona or Arecibo, Puerto Rico from interference that has not yet occurred, and in fact may never occur. Common sense dictates that the Commission take a less restrictive approach, and reverse its complete ban. Only in this way, can the Commission satisfy its charter to act in the public interest.

III. Conclusion

For the reasons set forth above (and those contained in the Petition), the Commission can permit public safety organizations to use the 4.9 GHz band for helicopter downlink services, while also protecting the interests of radio astronomy. A complete ban on aeronautical use is an overly restrictive solution to a specious interference argument, and the Oppositions fail to convincingly demonstrate otherwise. The public interest clearly favors supporting the work of fire and police departments and emergency services in protecting the public welfare. The Commission's complete ban hinders the ability of these organizations to do their job, and must be reconsidered.

Respectfully submitted,

/s/ Todd D. Rosenberg

Todd D. Rosenberg
Richard J. Dyer
for O'MELVENY & MYERS LLP

Counsel to the Los Angeles County Sheriff's Department

CERTIFICATE OF SERVICE

I, Jennifer Nicholson, a secretary in the law firm of O'Melveny & Myers LLP, do hereby certify that a true copy of the *Consolidated Reply to the Consolidated Opposition of Cornell University and the National Academy of Sciences' Committee on Radio Frequencies to the Petition for Reconsideration* filed by the Los Angeles County Sheriff's Department was sent this 11th day of July, 2002, via United States First Class Mail, postage prepaid, to the following:

Paul J. Feldman
Fletcher, Heald & Hildreth, PLC
1300 North 17th Street,11th Floor
Arlington, VA 22209
(Counsel for Cornell University)

Bruce Alberts, President
National Academy of Sciences' Committee on Radio Frequencies
c/o Dr. Joel Parriott
National Research Council
500 5th Street, N.W., Room 955
Washington, D.C. 20001

Robert M. Gurss
Shook, Hardy & Bacon, L.L.P.
600 14th Street, N.W., Suite 800
Washington, D.C. 20005
(Counsel for Association of Public-Safety Communications Officials-International, Inc.)

Anthony Finizio, President
Microwave Radio Communications
101 Billerica Avenue, Bldg. 6
North Billerica, MA 01862-1256

Jeffery Krauss
Telecommunications & Technology Policy
620 Hungerford Drive, Suite 27
Rockville, MD 20850

/s/ Jennifer Nicholson
Jennifer Nicholson

DC1:519255